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Hog fuel availability in the south coastal region of British Columbia: 1985

P.W. Appleby

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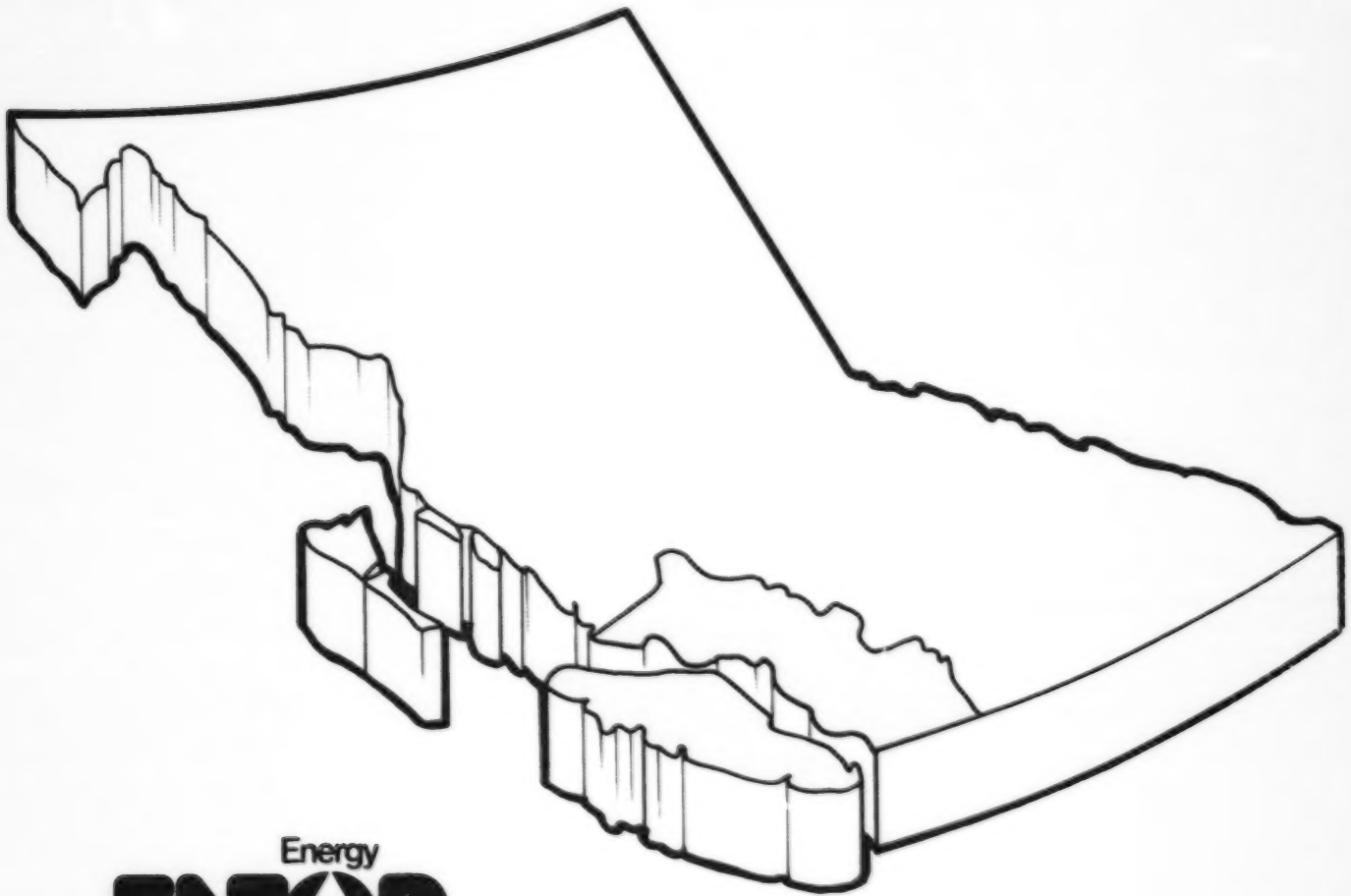

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Hog fuel availability in the south coastal region of British Columbia: 1985

by

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Foreword

ENFOR is the acronym for the ENergy from the FORest (ENergie de la FORêt) program of the Canadian Forestry Service. This program of research and development is aimed at securing the knowledge and technical competence to facilitate in the medium to long term a greatly increased contribution from forest biomass to our nation's primary energy production. It is part of the federal government's efforts to promote the development and use of renewable energy as a means of reducing dependence on petroleum and other nonrenewable energy sources.

The ENFOR program is concerned with the assessment and production of forest biomass with potential for energy conversion and deals with such forest-oriented subjects as inventory, harvesting technology, silviculture and environmental impacts. (Biomass Conversion, dealing with the technology of converting biomass to energy or fuels, is the responsibility of the Renewable Energy Division of the Department of Energy Mines and Resources). Most ENFOR projects, although developed by CFS scientists in the light of program objectives, are carried out under contract by forestry consultants and research specialists. Contractors are selected in accordance with science procurement tendering procedures of the Department of Supply and Services. For further information on the ENFOR Biomass Production program, contact...

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Abstract

In 1985, a total of 3 720 000 gravity packed units (GPU's) of hog fuel were produced in the south coastal region of British Columbia, of which 87% or 3 250 000 units were utilized and 13% or 470 000 units were surplus. Four percent of the total hog fuel produced was exported.

Sawmills were the major producers of hog fuel (71%). Pulpmills were the major users of hog fuel (70%). The major portion of the net available surplus is located at shingle and shake mills (39%) and sawmills (31%).

The Fraser River Delta sub-region is the largest producer of hog fuel; while the Campbell River sub-region is the largest user of hog fuel. The Fraser River North sub-region has the largest net available supply of surplus hog fuel.

Of the 3 250 000 units of hog fuel utilized in 1985, 80% was for production of steam and power, 10% was for pulp furnish, 4% was for 'board' furnish, and 6% was used for a diversity of 'local' uses.

In 1985, 36% of surplus hog fuel was disposed of by landfill, 42% by incineration and 22% was placed into inventory. Sixty-two percent of the hog fuel produced, or 2 300 000 units, was transferred between one mill location and another. Of this, 48% was transferred between mills in the same sub-region and 52% between mills in different sub-regions. Of the 470 000 units of surplus hog fuel, 78% was located on the mainland and 22% was located on Vancouver Island.

Fifty-six percent of the hog fuel surplus was cedar, 42% was derived from other conifers, and 2% was derived from cottonwood and alder.

Forty-four percent of the surplus has been, or could be, hogged by the producer. Fifty-six percent is produced by mills with no hogging facilities.

The net available surplus hog fuel can vary appreciably from year to year depending on the level of production by the sawmill sector of the forest industry and the level of utilization by the pulp sector. 1985 was very close to the current norm in terms of total hog fuel production and utilization. Hog fuel production, utilization and surplus were all less in 1985 than in 1977, when a similar study was undertaken. Changes in the production and utilization of hog fuel since 1985 could reduce the hog fuel surplus in 1987 to 230 000 GPU's.

Résumé

En 1985, la région de la côte sud de la Colombie-Britannique a produit au total 3 720 000 unités tassées par gravité (UTG) de déchets de bois, et 87 % de la production, ou 3 250 000 unités, a été utilisée. Il y a donc eu un surplus de 470 000 unités, ou 13 %. Quatre pour cent de la production totale a été exportée.

Les principaux producteurs de déchets de bois ont été les scieries (71 %), tandis que les usines de pâtes ont constitué les principaux utilisateurs (70 %). La majeure partie du surplus disponible net se trouvait aux fabriques de bardeaux (39 %) et aux scieries (31 %).

La sous-région du delta du Fraser est la plus grosse productrice de déchets de bois, et celle de la rivière Campbell, la plus grosse utilisatrice. Par ailleurs, la sous-région du nord du fleuve Fraser est celle qui a eu la plus grande quantité disponible nette de déchets de bois excédentaires.

Sur les 3 250 000 unités utilisées en 1985, 80 % l'ont été pour la production de vapeur et d'éner-

gie, 10 %, pour la production de pâtes, 4 %, pour la fabrication de panneaux, et 6 %, pour diverses utilisations locales.

En 1985, les déchets de boix excédentaires ont été soit éliminés par enfouissement (36 %) ou incinération (42 %), soit entreposés (22 %). Soixante-deux pour cent des déchets de bois produits, soit 2 300 000 unités, ont été transférés d'une usine à une autre; dans 48 % des cas, il s'agissait de transferte entre usines de la même sous-région, et dans 52 % des cas, de transferts entre des usines de sous-régions différentes. Des 470 000 unités de déchets de bois excédentaires, 78 % se trouvaient dans la partie continentale, et 22 % dans l'île de Vancouver.

Le thuya représentait 56 % des déchets de bois excédentaires; les autres conifères, 42 %; le reste, soit 2 %, provenait du peuplier deltoïde et de l'aulne.

Quarante-quatre pour cent des déchets excédentaires avaient été ou auraient pu être broyés par leur producteur, tandis que 56 % ont été produits par des usines ne possédant pas d'installations pour le broyage des résidus.

La quantité excédentaire nette de déchets de bois disponibles peut varier énormément d'une année a l'autre selon le niveau de production par le secteur des scieries de l'industrie forestière et selon le niveau d'utilisation par le secteur des pâtes. L'année 1985 serait une année où la production et l'utilisation de déchets de bois ont été très près de la norme actuelle. Une étude simulaire effectuée en 1977 avait indiqué une production, une utilisation et une quantité excédentaire de déchets de bois plus élevées qu'en 1985. Les changements survenus dans la production et l'utilisation des déchets de bois depuis 1985 pourraient avoir pour effet de réduire la quantité excédentaire à 230 000 unités en 1987.

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Introduction

A great many studies of the renewable energy industry, including a number funded by the ENFOR program, have identified hog fuel produced by the forest industry as the least expensive source of biomass energy. This study updates work funded by the British Columbia Wood Waste Energy Coordinating Committee in 1977 (Reid, Collins and Associates 1978), which investigated hog fuel availability in the south coastal region of British Columbia.

Since then, much has changed regarding hog fuel production, utilization and the available surplus. In addition, the prices for heavy fuel oil have changed radically (Nagle et al. 1987); previous forecasts of oil prices and alternative fuel consumption are thus invalid.

The conclusions of this present investigation of hog fuel production, availability, and utilization are directly related to the economic conditions occurring when the study was conducted.

Methodology and derivation of basic data

Mill listing

A comprehensive forest products mill listing was prepared using the following sources.

- A list of major primary timber processing facilities in British Columbia, printed by the Ministry of Forests and Lands in 1985.
- The 1986 membership list of the Independent Lumber Remanufacturers Association.
- B.C. Telephone Company's 1986 Yellow Pages Directory.
- *Vancouver Sun* and *Vancouver Province* newspapers.

This listing contains all pulpmills, veneer and plywood mills, hardboard and particleboard plants, all sawmills producing over 3000 Mfbm per year, all shake and shingle mills producing over 20 000 squares per year, and the major remanufacturing or wood specialty plants in the region.

Hog fuel supply sub-regions

The south coastal region was divided into 13 hog fuel supply sub-regions (Appendix 1). These were based on logical geographical areas, concentration of manufacturing facilities and transportation considerations. Table 1 lists the 13 sub-regions, together with the major hog fuel production and utilization centers within each.

Hog fuel questionnaires

Hog fuel questionnaires were sent to most of the 180 manufacturing operations of the 119 forest products companies. In some cases, only telephone contact was made. Table 2 shows the number of questionnaires sent out and returned by type of mill, and the number of mills for which partial information was received by telephone only.

We estimate that the survey accounts for at least 98% of the total hog fuel produced with the south coastal region of British Columbia during 1985, and virtually 100% of the potentially usable hog fuel in the region. The balance is produced by a number of small sawmill and shingle and shake operations scattered throughout the entire region.

Table 3 summarizes the number of manufacturing facilities in the south coastal region of British Columbia included in the hog fuel study by mill type and sub-region. The study includes 180 forest products operations.

With a few exceptions, representatives of the forest products companies contacted throughout the course of this study were very cooperative. Appendix 2 contains a listing of the contributing companies.

Analysis and reconciliation of basic data

All questionnaires were reviewed for completeness and reliability of content. Virtually all companies were contacted more than once, either for additional information, clarification, or for discussion of apparent discrepancies. For example, most discrepancies were accounted for during this review and analysis process. Those hog fuel volumes reported as in 'inventory' were

Table 1. Hog fuel supply sub-regions and major production and utilization centers

Hog fuel sub-region		Major hog fuel centers	
No.	Name	Production	Utilization
1	Burrard Inlet	North Vancouver, Port Moody	Port Moody
2	Howe Sound	Squamish, Woodfibre	Woodfibre, Port Mellon
3	Fraser River Delta	New Westminster, Richmond, Vancouver, Burnaby, Surrey, Delta	New Westminster, Vancouver
4	Fraser River North	Haney, Whonock, Mission, Hammond	Hammond
5	Fraser River South	Fort Langley, Abbotsford, Chilliwack	–
6	Fraser Canyon	Boston Bar	–
7	Sunshine Coast	Powell River	Powell River
8	Victoria/Sooke	Victoria, Sooke	Victoria
9	Cowichan Lake/ Crofton	Youbou, Crofton, Cowichan Bay	Crofton, Youbou
10	Chemainus/Nanaimo	Chemainus, Ladysmith, Nanaimo	Nanaimo
11	Campbell River	Courtenay, Campbell River, Duncan Bay	Duncan Bay
12	Port Alberni	Port Alberni	Port Alberni
13	Tahsis/Port Alice	Tahsis, Gold River, Port Alice	Gold River, Port Alice

classified as surplus to 1985 requirements, and recorded separately. During the preparation of the basic data and summary tables used throughout this report, hog fuel volumes were adjusted as necessary. However, some discrepancies remained, particularly in regard to shipments and receipts from one region to another. These had to be further adjusted to ensure that the disposition of all hog fuel produced in 1985 was reported, and that sales and purchases balanced.

Where no hog fuel production volumes were available from those operations included in this study, estimates have been used. These estimates were determined by applying average hog fuel yield factors to the mills' 1985 product production data. Estimates have been indicated wherever they have been used.

Hog fuel production, usage and surplus by sub-regions and individual mills

A detailed tabulation of 1985 hog fuel production, purchases, on-site utilization, on-site surplus, disposition of surplus, and net available surplus by individual mills within each subregion is contained in Appendix 3. All subsequent hog fuel data and summaries throughout

Table 2. Summary of response to the hog fuel survey

Mill type	Questionnaires sent out	Questionnaires returned	Partial data received by phone	Total response	No response
Pulpmills	10	9	–	9	1
Sawmills	59	41	6	47	12
Plywood, 'board' mills	12	9	1	10	2
Shake and shingle mills	42	20	18	38	4
Remanufacturing plants	42	20	19	39	3
Sub-total	165	99	44	143	22
%	100%	60%	27%	87%	13%
Telephone contact only	15	–	15	15	–
Total	180	99	59	158	22

Table 3. Forest products manufacturing facilities in the south coastal region of British Columbia included in the hog fuel study by mill type and sub-region

	Sub-region													
Mill type	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Pulpmills	–	2	1	–	–	–	1	–	1	1	1	1	2	10
Plywood and veneer plants	–	–	8	–	–	–	–	1	–	–	–	1	–	10
Hardboard and particleboard plants	–	–	2	–	–	–	–	–	–	–	–	–	–	2
Sawmills: over 100 000 Mbfm/yr	–	1	5	2	–	–	–	2	2	5	–	2	1	20
50 000-100 000 Mbfm/yr	2	–	9	1	1	1	–	–	–	3	2	–	–	19
25 000-50 000 Mbfm/yr	–	1	7	–	–	–	1	–	–	1	1	–	1	12
3000-25 000 Mbfm/yr	–	–	6	–	–	–	–	–	2	4	–	1	–	13
Sub-total	2	2	27	3	1	1	1	2	4	13	3	3	2	64
Shingle and shake mills:														
over 100 000 squares/yr	–	–	3	10	–	–	–	–	–	–	–	–	–	13
50 000-100 000 squares/yr	–	–	1	7	1	–	–	–	–	–	2	–	1	12
20 000-50 000 squares/yr	–	–	–	9	3	–	3	–	1	–	2	1	–	19
Sub-total	–	–	4	26	4	–	3	–	1	–	4	1	1	44
Remanufacturing and speciality mills	1	–	31	4	13	–	–	–	1	–	–	–	–	50
Total	3	4	73	33	18	1	5	3	7	14	8	6	5	180

this report have been generated from the basic data contained in this appendix.

Table 4 summarizes 1985 hog fuel production, usage and surplus by sub-regions. In 1985, in round figures, a total of 3 720 000 GPU's of hog fuel were produced in the south coastal region of which 3 250 000 GPU's were utilized and 470,000 GPU's were surplus.

Four percent of the total hog fuel produced was exported. Although export volumes are not considered as surplus in this report, they do represent a potential surplus or source of hog fuel should a hog fuel deficit occur in coastal British Columbia.

Hog fuel production, utilization and net available surplus within sub-regions by mill type

Table 5 summarizes hog fuel production within sub-regions by mill type, Table 6 summarizes hog fuel utilization with sub-regions by mill type, and Table 7 summarizes net available hog fuel surplus within sub-regions by mill type. From these tables, it can be seen that sawmills are the major producers of hog fuel (71%), that pulpmills are the major users of hog fuel (70%), and that the major portion of the net available hog fuel surplus is located at shingle and shake mills (39%) and sawmills (31%).

Table 4. Hog fuel production, usage, and surplus in 1985 by sub-regions (GPU's)

Sub-region No.	Name	Produced within sub-region	Imported into sub-region	Utilized within[a/] sub-region	Utilized outside[b/] sub-region	Net surplus within[c/] sub-region
1.	Burrard Inlet	127 000	100	75 700	45 800	6000
2.	Howe Sound	66 600	183 000	169 400	80 200	–
3.	Fraser River Delta	1 169 900	13 300	532 000	561 600	89 600
4.	Fraser River North	329 600	–	99 300	60 300	170 000
5.	Fraser River South	130 100	3200	42 600	51 500	39 200
6.	Fraser Canyon	60 000	–	–	–	60 000
7.	Sunshine Coast	111 400	179 100	288 700	–	1800
8.	Victoria/Sooke	102 300	–	50 400	46 900	5000
9.	Cowichan Lake/Crofton	248 800	182 500	364 500	–	66 800
10.	Chemainus/Nanaimo	609 800	–	281 700	324 300	3800
11.	Campbell River	198 500	435 600	619 700	6900	7500
12.	Port Alberni	332 400	31 700	356 300	–	7800
13.	Tahsis/Port Alice	231 000	–	206 200	14 100	10 700
	Sub-total	3 717 800	1 028 500	3 086 500	1 191 600	468 200
	Export-U.S.A/Japan	–	163 100	163 100	–	–
	Total	3 717 800	1 191 600	3 249 600	1 191 600	468 200
	%	100%	–	87%	–	13%

a. Hog fuel utilized within a sub-region includes on-site utilization plus local sales.

b. Hog fuel utilized outside a sub-region includes exports.

c. Net surplus is the sum of production plus imports minus utilization within or outside the sub-region.

Table 5. Hog fuel production within sub-regions in 1985 by mill type (GPU's)

Sub-region No.	Name	Mill Type: Sawmills	Pulpmills	Plywood	Shingle/ shake	Remanufacturers	Total
1.	Burrard Inlet	121 000	–	–	–	6400	127 400
2.	Howe Sound	42 700	23 900	–	–	–	66 600
3.	Fraser River Delta	824 700	8600	160 400	60 400	115 800	1 169 900
4.	Fraser River North	115 200	–	–	207 300	7100	329 600
5.	Fraser River South	52 000	–	–	11 000	67 100	130 100
6.	Fraser Canyon	60 000	–	–	–	–	60 000
7.	Sunshine Coast	101 400	*	–	8300	1700	111 400
8.	Victoria/Sooke	84 300	–	18 000	–	–	102 300
9.	Cowichan Lake/Crofton	207 700	23 700	–	4500	12 900	248 800
10.	Chemainus/Nanaimo	587 800	22 000	–	–	–	609 800
11.	Campbell River	120 600	28 200	–	19 700	30 000	198 500
12.	Port Alberni	230 400	67 000	33 000	2000	–	332 400
13.	Tahsis/Port Alice	103 100	121 900	–	6000	–	231 000
	Total	2 650 900	295 300	211 400	319 200	241 000	3 717 800
	%	71%	8%	6%	9%	6%	100%

* included with sawmill

Table 6. Hog fuel utilization within sub-regions in 1985 by mill type (GPU's)

Sub-region No.	Name	Mill Type: Sawmills	Pulpmills	Plywood	Shingle/ shake	Remanufacturers	Other & Local	Total
1.	Burrard Inlet	70 500	–	–	–	5200	–	75 700
2.	Howe Sound	–	169 400	–	–	–	–	169 400
3.	Fraser River Delta	89 400	22 500	317 100	–	9700	93 300	532 000
4.	Fraser River North	57 500	–	–	14 000	–	27 800	99 300
5.	Fraser River South	–	–	–	–	7200	35 400	42 600
6.	Fraser Canyon	–	–	–	–	–	–	–
7.	Sunshine Coast	–	288 700	–	–	–	–	288 700
8.	Victoria/Sooke	33 000	–	8800	–	–	8600	50 400
9.	Cowichan Lake Crofton	100 000	261 600	–	–	–	2900	364 500
10.	Chemainus/Nanaimo	–	281 700	–	–	–	–	281 700
11.	Campbell River	–	619 700	–	–	–	–	619 700
12.	Port Alberni	46 800	309 500	–	–	–	–	356 300
13.	Tahsis	–	206 200	–	–	–	–	206 200
	Sub-total	397 200	2 159 300	325 900	14 000	22 100	168 000	3 086 500
	%	13%	70%	11%	–	1%	5%	100%
	Exports*	–	–	–	–	–	163 100	163 100
	Total	397 200	2 159 300	325 900	14 000	22 100	331 100	3 249 600
	%	12%	67%	10%	–	1%	10%	100%

* 5% of total hog fuel utilized is exported

Table 7. Net available hog fuel surplus within sub-regions in 1985 by mill type (GPU's)

Sub-region No.	Name	Mill type: Sawmills	Pulpmills	Plywood	Shingle/ Shake	Remanufacturers	Total
1.	Burrard Inlet	5400	–	–	–	600	6000
2.	Howe Sound	–	–	–	–	–	–
3.	Fraser River Delta	41 200	8700	12 700	5600	21 400	89 600
4.	Fraser River North	10 000	–	–	157 200	2800	170 000
5.	Fraser River South	22 500	–	–	2500	14 200	39 200
6.	Fraser Canyon	60 000	–	–	–	–	60 000
7.	Sunshine Coast	–	1800	–	–	–	1800
8.	Victoria/Sooke	–	–	5000	–	–	5000
9.	Cowichan Lake/Crofton	400	61 900	–	4500	–	66 800
10.	Chemainus/Nanaimo	–	3800	–	–	–	3800
11.	Campbell River	–	200	–	7300	–	7500
12.	Port Alberni	–	7800	–	–	–	7800
13.	Tahsis/Port Alice	4700	–	–	6000	–	10 700
	Total	144 200	84 200	17 700	183 100	39 000	468 200
	%	31%	18%	4%	39%	8%	100%

Sub-region 3 (Fraser River delta) is the largest producer of hog fuel. Sub-region 11 (Campbell River) is the largest user of hog fuel. Sub-region 4 (Fraser River north) has the largest net available supply of surplus hog fuel.

Of the 468 200 units of surplus hog fuel in the total region, 366 600 units (78%) were located on the mainland and 101 600 units (22%) were located on Vancouver Island.

Hog fuel utilization within sub-regions by end use

Table 8 summarizes the 1985 hog fuel utilization within sub-regions by end use. This table indicates that of the total hog fuel utilized, 80% is used for production of steam and power, 14% is used for pulp furnish or board production, and 6% is used for a variety of local purposes. By interpolation between Tables 6 and 8, it can be derived that utilization was as follows:

- Sawmills — 397 200 units for steam and power
- Pulp mills — 295 700 units for pulp furnish
- Pulp mills — 1 863 600 units for steam and power
- Board mills — 141 300 units for 'board' production
- Plywood and board mills — 184 600 units for steam and power
- Shake and shingle mills — 14 000 units for steam and power
- Remanufacturing plants — 22 100 units for a diversity of local uses
- Other — 168 000 units for steam and power or pulp furnish

Total — 3 249 600 units

Disposition of net surplus hog fuel by sub-region

Table 9 summarizes the disposition of net surplus mill hog fuel in 1985 by sub-regions and method of disposal. This is the available surplus after allowing for outside sales and transfers. In this report, all hog fuel now being directed to meaningful use, including local sales, is not considered as surplus, regardless of whether it is sold

Table 8. Hog fuel utilization within sub-regions in 1985 by end use (GPU's)

Sub-region No.	Name	Hog fuel utilization by end use: Steam/ power	Pulp furnish	Board production	Other[a]	Total
1.	Burrard Inlet	75 700	–	–	–	75 700
2.	Howe Sound	169 400	–	–	–	169 400
3.	Fraser River Delta	295 400	–	141 300	95 300	532 000
4.	Fraser River North	71 500	–	–	27 800	99 300
5.	Fraser River South	–	–	–	42 600	42 600
6.	Fraser Canyon	–	–	–	–	
7.	Sunshine Coast	288 700	–	–	–	288 700
8.	Victoria/Sooke	41 800	–	–	8600	50 400
9.	Cowichan Lake/Crofton	303 600	58 000	–	2900	364 500
10.	Chemainus/Nanaimo	281 700	–	–	–	281 700
11.	Campbell River	382 000	237 700	–	–	619 700
12.	Port Alberni	356 300	–	–	–	356 300
13.	Tahsis/Port Alice	206 200	–	–	–	206 200
	Sub-total	2 472 300	295 700	141 300	177 200	3 086 500
	%	80%	9%	5%	6%	100%
	Export – Japan	–	43 200	–	–	43 200
	Export – U.S.A.	119 900	–	–	–	119 900
	Sub-total export	119 900	43 200	–	–	163 100
	Total utilization	2 592 200	338 900	141 300	177 200	3 249 600
	%	80%	10%	4%	6%	100%

[a] Includes hog fuel components used for fire-log production and local sales. Hog fuel sold or disposed of locally is used for soil conditioner, bark mulch, construction sites, horse paddocks, farmers, litter, road or trail beds, etc.

or given away. Furthermore, export volumes have not been considered as surplus.

Sometimes surplus hog fuel is trucked away from the producing site by local truckers and the final destination of this hog fuel is often unknown. In these cases, we applied the following rule: if the producer paid to have hog fuel hauled away then it ended up as landfill, but if he had it hauled away for free, then it was sold for local uses or to other mills to pay for the trucking cost. In Appendix 3, an adjustment to the totals for Sub-region 3 has been made to reflect this situation.

In 1985, 36% of the net mill surplus was disposed of by landfill, 42% by incineration, and 22% was placed into inventory. Table 10 summarizes hog fuel shipments within and between sub-regions. In 1985, over 2 300 000 GPU's were transferred between one mill location and another. This represents 71% of the total hog fuel utilized and 62% of the total hog fuel produced. Of the over 2,300,000 GPUs transferred, 48% was transferred between mills in the same sub-region and 52% between mills in different sub-regions.

Table 9. Disposition of net surplus mill hog fuel in 1985 by sub-region and method of disposal (GPU's) (after outside sales)

Sub-region No.	Name	Landfill	Incineration	Inventory	Total net surplus
1.	Burrard Inlet	6000	–	–	6000
2.	Howe Sound	–	–	–	–
3.	Fraser River Delta	67 000	–	22 600	89 600
4.	Fraser River North	53 300	116 700	–	170 000
5.	Fraser River South	36 700	2500	–	39 200
6.	Fraser Canyon	–	60 000	–	60 000
7.	Sunshine Coast	–	–	1800	1800
8.	Victoria/Sooke	–	–	5000	5000
9.	Cowichan Lake/Crofton	–	4900	61 900	66 800
10.	Chemainus/Nanaimo	–	–	3800	3800
11.	Campbell River	–	7300	200	7500
12.	Port Alberni	–	–	7800	7800
13.	Tahsis/Port Alice	4700	6000	–	10 700
	Total	167 700	197 400	103 100	468 200
	%	36%	42%	22%	100%

General composition and nature of net available hog fuel surplus

Table 11 indicates, by sub-regions and mill types, the general composition and nature of the hog fuel surpluses identified in Table 7. Table 12 summarizes the surplus hog fuel volumes in Table 11 by broader hog fuel sub-regions, species groups, and hogged versus unhogged volumes. Surplus wood residues generated in mills equipped with hoggers are assumed to have been hogged, or easily could be if a market developed.

Current hog fuel selling prices, delivery costs, and disposal costs

Hog fuel selling prices, delivery costs and disposal costs are extremely variable throughout the region. They depend primarily on the type of hog fuel, the method of transport, the location of the mill, and the distance involved. Prices and costs are extremely volatile and therefore very difficult to quantify. Prices in 1985 were possibly higher than normal because of the large volumes of hog fuel purchased by the Department of Highways for the Annacis Island bridge project.

Hog fuel producers (sawmills) selling hog fuel for steam and power production were receiving between $2.00 to $5.50 per GPU for hog fuel loaded on a barge at the sawmill. The average price in 1985 was approximately $3.50 per unit. Hog fuel producers (sawmills) selling sawdust for pulp furnish were receiving between $5.00 to $9.00 per GPU for sawdust loaded on a barge at the sawmill. The average price in 1985 was approximately $7.75 per unit.

When transported by water, hog fuel and sawdust are normally purchased FOB sawmill with the purchaser paying the additional cost of transportation. When transported by truck, the purchaser usually buys hog fuel FOB his mill, with the delivery cost being the responsibility of the producer. In 1985, transportation costs of hog fuel by barge (including barge rental and towing) from the lower mainland were in the order of $10.00 to $14.00 per unit to the Powell River/-Campbell River area, and $8.00 to $11.00 per unit to the Nanaimo/Crofton area.

In 1985, disposal costs of surplus hog fuel volumes to landfill ranged between $3.00 to $9.00 per GPU and averaged approximately $5.00 per GPU.

Table 10. Summary of hog fuel shipments within and between sub-regions in 1985 (GPU's)

Shipped from sub-region No.	Name	Shipped to sub-region or exported (excluding local sales)															Shipped outside sub-region
		1	2	3	4	5	6	7	8	9	10	11	12	13	U.S.A.	Japan	Total	
1.	Burrard Inlet	–	45 200	600	–	–	–	–	–	–	–	–	–	–	–	–	45 800	45 800
2.	Howe Sound	–	8100	9500	–	–	–	4200	–	–	–	51 400	–	–	15 100	–	88 300	80 200
3.	Fraser River Delta	–	129 300	239 300	–	3200	–	97 500	–	1100	–	261 000	–	–	26 300	43 200	800 900	561 600
4.	Fraser River North	100	6300	–	–	–	–	1700	–	100	–	25 900	–	–	26 200	–	60 300	60 300
5.	Fraser River South	–	–	–	–	–	–	–	–	–	–	–	–		51 500	–	51 500	51 500
6.	Fraser Canyon	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7.	Sunshine Coast	–	–	–	–	–	–	10 000		–	–	–	–	–	–	–	10 000	–
8.	Victoria/Sooke	–	–	–	–	–	–	–	–	43 600	–	3300	–	–	–	–	46 900	46 900
9.	Cowichan Lake/Crofton	–	–	–	–	–	–	–	–	117 300	–	–	–	–	–	–	117 300	–
10.	Chemainus/Nanaimo	–	–	–	–	–	–	75 000	–	137 700	271 800	79 900	31 700	–	–	–	596 100	324 300
11.	Campbell River	–	2200	3200	–	–	–	700	–	–	–	163 000	–	–	800	–	169 900	6900
12.	Port Alberni	–	–	–	–	–	–	–	–	–	–	–	227 300	–	–	–	227 300	–
13.	Tahsis/Port Alice	–	–	–	–	–	–	–	–	–	–	14 100	–	84 300	–	–	98 400	14 100
	Total	100	191 100	252 600	–	3200	–	189 100	–	299 800	271 800	598 600	259 000	84 300	119 900	43 200	2 312 700	1 191 600
Shipped within sub-region		–	8100	239 300	–	–	–	10 000	–	117 300	271 800	163 000	227 300	84 300	–	–	1 121 100	
Shipped into sub-region		100	183 000	13 300	–	3200	–	179 100	–	435 600	–	435 600	31 700	–	119 900	43 200	1 191 600	

Table 11. General composition and nature of net available hog fuel surplus by sub-region and mill type in 1985 (GPU's)

Sub-region No.	Name	Mill type	Surplus volume	Species mix	Hogging facilities	Estimated major component composition
1.	Burrard Inlet	Sawmills	5400	Cedar	Yes	Bark (wet)
		Remanufacturers	600	Other conifers	No	Shavings
2.	Howe Sound	All	Nil	–	–	–
3.	Fraser River Delta	Sawmills	8600	Cedar	No	Mixture
		Sawmills	32 600	Other conifers	Yes	Mixture
		Pulpmills	8 700	Cottonwood	No	Bark
		Plywood	12 700	Spruce	No	Shavings, Trim
		Shingle/Shake	5600	Cedar	Yes	Bark, Sawdust
		Remanufacturers	9700	Cedar	No	Shavings, Sawdust
		Remanufacturers	9700	Other conifers	No	Shavings, Sawdust
		Remanufacturers	2000	Alder	No	Shavings, Sawdust
4.	Fraser River North	Sawmills	10 000	Cedar	Yes	Mixture
		Shingle/Shake	52 400	Cedar	Yes	Bark, Sawdust
		Shingle/Shake	104 800	Cedar	No	Bark, Sawdust
		Remanufacturers	2800	Cedar	No	Shavings, Sawdust
5.	Fraser River South	Sawmills	22 500	Cedar	No	Mixture
		Shingle/Shake	2500	Cedar	No	Bark, Sawdust
		Remanufacturers	14 200	Cedar	Yes	Shavings
6.	Fraser Canyon	Sawmill	60 000	Other conifers	No	Mixture
7.	Sunshine Coast	Pulp mill	1800	Other conifers	Yes	Mixture
8.	Victoria/Sooke	Plywood	5000	Other conifers	Yes	Bark, Chip Fines
9.	Cowichan Lake/ Crofton	Sawmill	400	Cedar	No	Mixture
		Shingle/Shake	4500	Cedar	No	Bark, Sawdust
		Pulp mill	61 900	Other conifers	Yes	Mixture
10.	Chemainus/	Pulp mill	3800	Other conifers	Yes	Mixture
11.	Campbell River	Pulp mill	200	Other conifers	Yes	Mixture
		Shingle/Shake	7300	Cedar	No	Bark, Sawdust
12.	Port Alberni	Pulp mill	7800	Other conifers	Yes	Mixture
13.	Tahsis/Port Alice	Sawmill	4700	Cedar	Yes	Bark
		Shingle/Shake	6000	Cedar	No	Bark, Sawdust
	Total		468 200			

Table 12. Net available hog fuel surplus by broad sub-regions, species groups, and hogged and unhogged volumes in 1985 (GPU's)

Mainland (sub-regions 1 to 7)			
Cedar	– hogged	– 87 600	
	– unhogged	– 150 900	
	Total	238 500	65%
Other Conifers	– hogged	– 34 400	
	– unhogged	– 83 000	
	Total	117 400	32%
Cottonwood/Alder	– unhogged	10 700	3%
	Total	366 600	100%
	Total hogged	122 000	(33%)
	Total unhogged	244 600	(67%)
Vancouver Island (sub-regions 8 to 13)			
Cedar	– hogged	– 4700	
	– unhogged	– 18 200	
	Total	22 900	23%
Other conifers	– hogged	– 78 700	77%
	Total	101 600	100%
	Total hogged	83 400	(82%)
	Total unhogged	18 200	(18%)
All sub-regions			
Cedar	– hogged	– 92 300	
	– unhogged	– 169 100	
	Total	261 400	56%
Other conifers	– hogged	– 113 100	
	– unhogged	– 83 000	
	Total	196 100	42%
Cottonwood/alder	– unhogged	– 10 700	2%
	Total	468 200	100%
	Total hogged	205 400	(44%)
	Total unhogged	262 800	(56%)

Table 13. Lumber production on the coast of British Columbia from 1976 to 1985

Year	Lumber production (MMfbm)	% difference from 10-year average	% difference from 5-year average
1976	3 988	−2.4	–
1977	4 499	+10.1	–
1978	4 803	+17.5	–
1979	4 657	+13.9	–
1980	4 252	+4.0	–
1981	3 458	−15.4	−7.4
1982	3 170	−22.4	−15.1
1983	4 140	+1.3	+10.9
1984	3 903	−4.5	+4.6
1985	3 996	−2.2	+7.0
1976-1985 average	4 087	–	–
1981-1985 average	3 733	–	–

Source: Statistics Canada

Miscellaneous sales for a variety of 'local' uses is normally on the basis that hog fuel is trucked away at no cost or profit to the producer, with the buyer paying the cost of transportation. In some instances, however, the producing mill did receive up to $5.00 to $10.00 per unit FOB the mill.

Applicability of 1985 as the base year for the study

Previous sections have documented the production, utilization and surplus of hog fuel for 1985. Was 1985 a typical year?

Table 13 indicates lumber production on the south coast of British Columbia for the 10-year period 1976 to 1985 inclusive, and the annual fluctuation from the 5-year and 10-year averages.

Lumber production fluctuates a great deal from year to year (Table 13). However, lumber production in 1985 was only slightly below the 10-year average.

Log production on the coast of British Columbia for the 10-year period 1976 to 1985 inclusive and the annual fluctuations from the 5-year and 10-year averages are presented in Table 14.

Log production fluctuates a great deal from year to year (Table 14). However, log production in 1985 was only slightly below the 10-year average.

Pulp production in British Columbia for the 10-year period 1976 to 1985 inclusive and annual fluctuations from the 5-year and 10-year averages are presented in Table 15.

Pulp production fluctuates from year to year but not to the same degree as lumber and log production (Table 15). Pulp production in 1985 was, however, 13% higher than the 10-year average.

Total production of hog fuel in any year depends primarily on the operating level of the sawmill sector of the forest industry, while total utilization of hog fuel depends on the level of operation of the pulp sector. In 1985, the sawmill sector produced over 70% of the total hog fuel available, while pulpmills utilized 70% of the total hog fuel used in the south coastal region of British Columbia. Therefore, the net available surplus in any given year may vary considerably depending on the production level of the sawmill sector and the

Table 14. Log production on the coast of British Columbia from 1976 to 1985

Year	Log production ($M m^3$)	% difference from 10-year average	% difference from 5-year average
1976	32 196	+15.0	–
1977	28 572	+2.1	–
1978	32 338	+15.5	–
1979	30 566	+9.2	–
1980	30 713	+9.7	–
1981	22 453	−19.8	−10.6
1982	21 351	−23.7	−15.0
1983	26 846	−4.1	+6.9
1984	27 226	−2.8	+8.4
1985	27 713	−1.0	+10.3
1976-1985 average	27 997	–	–
1981-1985 average	25 118	–	–

Source: British Columbia Ministry of Forests and Lands

Table 15. Pulp production in British Columbia from 1976 to 1985

Year	Pulp production (M tonnes)	% difference from 10-year average	% difference from 5-year average
1976	5 347	+0.2	–
1977	4 877	−8.6	–
1978	5 382	+0.8	–
1979	5 324	−0.2	–
1980	5 717	+7.1	–
1981	4 813	−9.8	−10.0
1982	4 759	−10.8	−11.0
1983	5 752	+7.8	+7.6
1984	5 371	+0.6	+0.5
1985	6 029	+13.0	12.8
1976-1985 average	5 337	–	–
1981-1985 average	5 345	–	–

Source: Canadian Pulp & Paper Association

Table 16. Comparison of hog fuel volumes between the 1977 and 1985 surveys (GPU's)

Hog fuel	1977 Survey		1985 Survey		% Change 1985 from 1977
Total: Production	4 978 100		3 717 800		−25
Utilization	3 667 900		3 249 600		−11
Surplus	1 310 200		468 200		−64
Production:					
Sawmills	3 749 300		2 650 900		−29
Pulp mills	455 000		295 300		−35
Plywood	342 500		211 400		−38
Shingle/shake	324 000		319 200		−1
Reman.	107 300		241 000		+125
Utilization:					
Sawmills	965 400		397 200		−59
Pulpmills	1 788 800		2 159 300		+21
Plywood/board	342 900		325 900		−5
Shingle/shake	29 700		14 000		−53
Reman.	45 500		22 100		−51
Local	495 600		331 100		−33
Utilization:					
Steam/power	2 619 400		2 472 300		−6
Pulp Furnish	402 600		295 700		−27
'Board' Production	150 300		141 300		−6
Other/Local	189 500		177 200		−6
Export	306 100		163 100		−47
Surplus: cedar	479 600	(37%)	261 400	(56%)	−45
Other Conifers	815 800	(62%)	196 100	(42%)	−76
Cottonwood/alder	14 800	(1%)	10 700	(2%)	−28

utilization level of the pulp sector.

We suggest, based on the foregoing, that 1985 was very close to the norm in terms of total hog fuel production and utilization when all sectors of the forest industry and recent capital improvements to many mills are considered.

Comparison between the 1977 and 1985 hog fuel surveys

This 1985 study is an update of similar study undertaken by Reid, Collins and Associates Limited in 1977 for the British Columbia Wood Waste Energy Coordinating Committee and published as ENFOR Project C-7 (Reid, Collins and Associates 1978).

Table 16 compares hog fuel production, utilization and surplus volumes in the south coastal region of British Columbia for the 1977 and 1985 surveys.

Table 17 compares the number of mills included in the 1977 and 1985 surveys.

From Tables 16 and 17 it can be seen that:

- Although more mills have been included in the 1985 survey, 1985 hog fuel production, utilization and surplus were all lower than in 1977.

Table 17. Comparison of number of mills between the 1977 and 1985 surveys

Mill type	Number of mills	
	1977 Survey	1985 Survey
Sawmill	68	64
Pulpmill	10	10
Plywood	12	10
Board	2	2
Shingle/shake	31	44
Reman.	13	50
Total	136	180

- Total hog fuel production in 1985 was 25% less than it was in 1977.
- 87% of the the reduction in total hog fuel production is attributable to lower hog fuel production by sawmills.
  - this is mainly due to the fact that many sawmills have been rebuilt or modernized since 1977. As a result, lumber recovery has increased while hog fuel (waste) production was decreased.
- Total hog fuel utilization in 1985 was 11% lower than it was in 1977.
- Hog fuel utilization by sawmills decreased by 59% from 1977 to 1985, while during the same period, utilization by pulpmills increased by 21%.
- Utilization of hog fuel (sawdust) by pulpmills for pulp furnish decreased 27% between 1977 to 1985.
- The volume of surplus hog fuel decreased 64% between 1977 to 1985 — from over 1 300,000 units to under 500 000 units.
- Most surplus hog fuel in 1985 was cedar, whereas in 1977 it was other conifers.

Assessment of changes in hog fuel production and utilization since 1985 and their effect on surplus

Sawmills are the primary producers of hog fuel. As was seen in Table 13, lumber production on the B.C. coast varies as much as 22% from the 10-year average in any given year. Therefore, hog fuel production, and thus surplus, could vary dramatically from year to year.

Pulpmills are the major users of hog fuel. Pulp production also varies significantly from year to year (Table 15) but not so dramatically as lumber production. Hog fuel utilization levels are thus somewhat less volatile than hog fuel production levels.

A number of changes in hog fuel production and utilization are planned or have taken place since 1985 — the year for which this survey was undertaken:

- An **increase** of 400 000 GPU's in the **utilization** of hog fuel for steam and power production or as pulp furnish by the Crown Forest Industries pulpmill at Duncan Bay.
- An **increase** of 50 000 GPU's in the **utilization** of hog fuel at other pulpmills through the replacement, upgrading or modernization of older boilers.
- A **decrease** of 35 000 GPU's in the **production** of hog fuel through the closure of some mills (i.e., Weldwood of Canada's Timberland sawmill and Canadian forest Products' Plywood mill).
- An **increase** in **production** of hog fuel through start-up of mills not operating in 1985 (i.e., Lamford Forest Products sawmills at New Westminster and Sooke); the start-up of new mills (i.e., Bayside Sawmills); the resumption of full production following modernization (i.e., B.C. Forest Products' Marpole Sawmill); the closure of hog fuel steam and power production facilities (i.e., British Columbia Forest Products' Victoria sawmill); and other changes which together amount to **170 000** GPU's.
- A **decrease** of 100 000 GPU's in the local sales

or **utilization** following completion of the Annacis Island bridge and road system.

- A **decrease** of 25 000 GPU's in hog fuel **production** at shingle/shake mills (six or more plants are planning chipper installations).

The net effect of the above changes would be a decrease in the net available surplus of 240 000 GPU's. Therefore, all other factors remaining constant, the 1985 survey indicated surplus of 470 000 GPU's will probably decline to 230 000 GPU's during 1987.

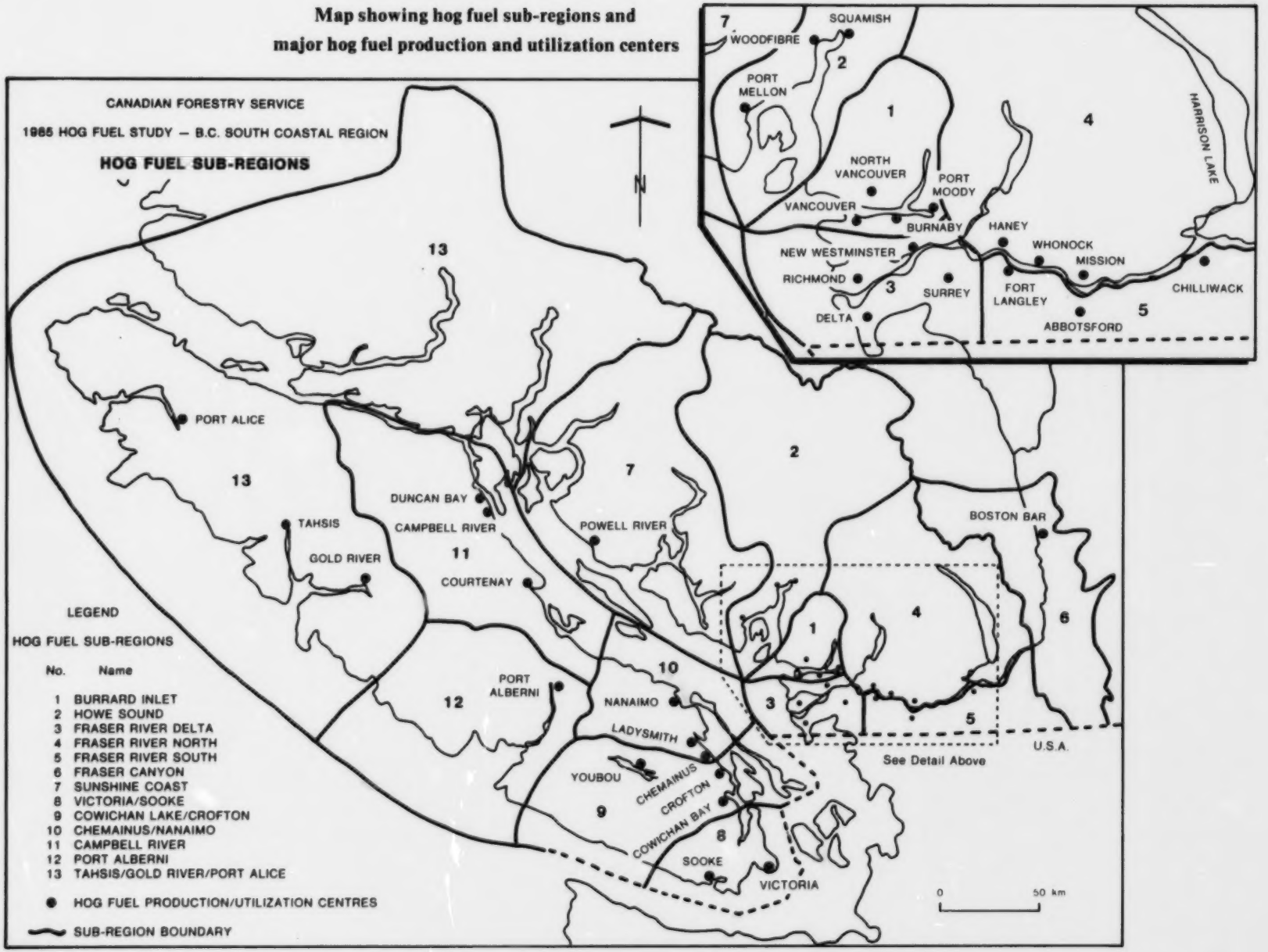
References

Nagle, G.S.; Massie, M.R.C.; Robinson, G.; Oakley, P.; Manning, G.H. 1987. The economics of residual fuel and fibre production on the B.C. Coast. Can. For. Serv. Pac. For. Cent. Inf. Rep. BC-X-289.

Reid, Collins and Associates Ltd. 1978. Hog fuel availability study — south coastal region of British Columbia. Prepared for the British Columbia Wood Waste Energy Coordinating Committee.

Appendix 1

Map showing hog fuel sub-regions and major hog fuel production and utilization centers



Appendix 2

Listing of contributing companies

Allmac Lumber Ltd.
Allwood Industries Ltd.
Allwood Products Ltd.
Anglo American Cedar Products Ltd.
Antrim Manufacturing Ltd.
Arbutus Manufacturing Ltd.
Associated Cedar Products Ltd.
Bakerview Forest Products Inc.
B.D.F. Shake Mill Ltd.
B.C. Clean Wood Preservers Ltd.
B.C. Forest Products Ltd.
B.C.M. Manufacturing Ltd.
Blackhawk Forest Products Ltd.
Bonne Venture Cedar Products Ltd.
Bowman Shake and Shingle Ltd.
Breakwater Timber Co. Ltd.
B.W. Creative Wood Industries Ltd.
Canadian Board Co.
Cantree Plywood Ltd.
C & C Lath Mill Ltd.
CIP Inc.
Clayton Cedar Products Ltd.
Coal Harbour Shake and Shingle Ltd.
Comox Valley Shakes Ltd.
Crown Forest Industries Ltd.
Delta Cedar Products Ltd.
Domtar Inc.
Doug English Cedar Products Ltd.
Empire Cedar Products Ltd.
Evergreen Cedar Products Ltd.
Faulklener Wood Specialties Ltd.
Five Star Forest Industries Ltd.
Fraser Cedar Products Ltd.
Fraser Pulp Chips Ltd.
Fraser River Planning Mills Ltd.
Goldwood Industries Ltd.
G and R Cedar Ltd.
Green River Log Sales Ltd.
Haney Cedar Products Ltd.
Holland Developments Ltd.
Imperial Lumber Ltd.
Inland Shake and Shingle Ltd
Island Lumber Specialties Ltd.
J.S. Squares & Rails Mfg. Ltd.
Jaguar Shake Co. Ltd.
Kaywood Industries Inc.
Kendon Recovery Ltd.
Lamford Forest Products Ltd.
Landucci Lumber Ltd.
Leslie Specialty Products Ltd.
Lindal Cedar Homes Ltd.
G.W. Lobb Shingle Mill Ltd.
Lyle Forest Products Ltd.
MacMillan Bloedel Ltd.
McKay Trucking Ltd.
Meeker Cedar Products Ltd.
Midland Wood Products Ltd.
Mill and Timber Products Ltd.
Moga Timber Mill
MJS Lumber
Mizuta Industries Ltd.
Nagaard Sawmill Ltd.
Nova Lumber Co. Ltd.
Orchardson Forest Products
Pac Deck Sales Ltd.
Panabode International
Parker Cedar Products Ltd.
Pattar Cedar Products Ltd.
Phoenix Millwork Ltd.
Pitt Timber Ltd.
Port Mann Lumber Remanufacturing Ltd.
Premium Cedar Products Ltd.
Primex Forest Products Ltd.
Prospective Shake Products Ltd.
R&E Cedar Products Ltd.
R and K Cedar Products Ltd.
Raincoast Cedar Products Ltd.
Ranba Lumber Corp.
Raven Lumber Ltd.
Redwood Shake and Shingle Ltd.
Richmond Plywood Corp. Ltd.
Ridgewood Forest Products
Ruskin Shake Ltd.
Scott Paper Ltd.
S and L Cedar Industries Ltd.
S and R Sawmills Ltd.
S and W Shake and Shingle Ltd.
Sauder Industries Ltd.
Sawarne Lumber Co. Ltd.
Serpentine Cedar Ltd.
Spindaleer Wood Products Ltd.
Stadco Forest Products Ltd.
Starco Pacific Manufacturing Ltd.
Stave Lake Cedar Mills Inc.
Surrey Mill Work Ltd.
Surrey Veneer Ltd.
Teal Cedar Products Ltd.
Tyee Timber Products Ltd.
Uneeda Wood Products Ltd.
Vedder River Shake and Shingle Ltd.
Victoria Plywood Cooperative
Waldun Forest Products Ltd.
Weldwood of Canada Ltd.
Wesco Lumber Manufacturing Ltd.
Westcoast Cellufibre Industries Ltd.
Western Pulp Inc.
Whonnock Industries Ltd.
W.I. Cedar International Inc.

Appendix 3

Detailed tabulation of 1985 hog fuel production, usage, and surplus by individual mills and sub-regions

(Note: The following tables have been totalled in order to allow arithmetic cross-checking and thus must be used with care. In particular, the 'total available' column shows the hog fuel available to each mill, *including off-site purchases*. When this column is totalled, it may include some double counting as these purchases are also initially shown as being available to the producing mill. This column has not been used as a data source for the tabular summaries within the main text. Estimates are given in parentheses.)

Table A 3.1. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 1 (Burrard Inlet)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam/power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
Nova Lumber	45 200	–	45 200	–	–	–		–	45 200	45 200	–	–	–	–	–	–
Weldwood of Canada-Flavelle	75 800	100	75 900	70 500	–	–	–	70 500	5400	–	–	–	–	5400	–	5400
Sub-total	121 100	100	121 100	70 500	–	–	–	70 500	50 600	45 200	–	–	–	5400	–	5400
Remanufacturing plants																
Sauder Industries-Wood Moulding	6400	–	6400	5200	–	–	–	5200	1200	–	–	600	–	600	–	600
Total	127 400	100	127 500	75 700	–	–	–	75 700	51 800	45 200	–	600	–	6000	–	6000

Table A 3.2. 1985 Hog fuel production, usage and surplus (GPU's) by mills in sub-region 2 (Howe Sound)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
Weldwood of Canada-Empire	42 700	–	42 700	–	–	–	–	–	42 700	32 600	10 100	–	–	–	–	–
Bayside Sawmills	New mill startup in late 1985. No significant hog fuel															
Pulpmills																
Canadian Forest Products	–	(90 000)	(90 000)	(90 000)	–	–	–	(90 000)	–	–	–	–	–	–	–	–
Western Pulp-Woodfibre	23 900	101 100	125 000	79 400	–	–	–	79 400	45 600	36 100	9500	–	–	–	–	–
Sub-total	23 900	191 100	215 000	169 400	–	–	–	169 400	45 600	36 100	9500	–	–	–	–	–
Total	66 600	191 100	257 700	169 400	–	–	–	169 400	88 300	68 700	19 600	–	–	–	–	–

Table A 3.3. 1985 Hog fuel production, usage and surplus GPU's by mills in sub-region 3 (Fraser River Delta)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Invent.	Net available Surplus
Sawmills																
MacMillan Bloedel-Can. White pine	75 700	3500	79 200	9500	–	–	–	9500	69 700	68 300	–	1400	–	–	–	–
MacMillan Bloedel-Queensborough	10 000	–	10 000	–	–	–	–	–	10 000	10 000	–	–	–	–	–	–
MacMillan Bloedel-New West.	44 600	200	44 800	–	–	–	–	–	44 800	40 200	–	4600	–	–	–	–
S&R Sawmills (3 mills)	46 300	–	46 300	–	–	–	–	–	46 300	20 100	5000	–	21 200	–	–	–
Teal Cedar Prod. (Stag Div.)	17 500	–	17 500	–	–	–	–	–	17 500	9400*	4300	–	3800	–	–	–
Pitt Timber	3300	–	3300	–	–	–		–	3300	–	–	–	3300	–	–	–
Mill & Timber Products	22 000	–	22 000	–	–	–	–	–	22 000	22 000	–	–	–	–	–	–
Crown Forest Ind.-Fraser Mills	(65 000)	–	(65 000)	(38 200)	–	–	–	(38 200)	26 800	19 600	7200	–	–	–	–	–
Delta Cedar Products	18 400	–	18 400	–	–	–	–	–	18 400	18 400	–	–	–	–	–	–
B.C. Forest Products-Marpole	31 200	–	31 200	–	–	–	–	–	31 200	5400	8900	16 900	–	–	–	–
B.C. Forest Products-Tilbury	43 000	–	43 000	–	–	–	–	–	43 000	3300	17 100	–	–	–	22 600	22 600
Canadian For. Prod.-Eburne	(90 000)	26 900	(116 000)	(41 700)	–	–	–	(41 700)	(75 200)	(32 000)	43 200*	–	–	–	–	–
West coast Cellufibre Industries	22 000	–	22 000	–	–	–	–	–	22 000	–	–	15 000	7000	–	–	–
Doman Industries	33 100	–	33 100	–	–	–	–	–	33 100	4500	19 000	9600	–	–	–	–
Fraser Pulp Chips	7000	–	7000	–	–	–	–	–	7000	–	–	–	3500	3500	–	3500
Goldwood Industries	3900	–	3900	–	–	–	–	–	3900	3500	–	400	–	–	–	–
Lindal Cedar Homes	10 000	–	10 000	–	–	–	–	–	10 000	–	–	1400	–	8600	–	8600
Primer Forest Products-Acorn	26 000	–	26 600	–	–	–	–	–	26 600	15 800	10 800	–	–	–	–	
Terminal Sawmills	75 800	–	75 800	–	–	–	–	–	75 800	52 400	23 400	–	–	–	–	–
Mainland Sawmills	37 600	–	37 600	–	–	–	–	–	37 600	29 400	8200	–	–	–	–	–
Larnford Forest Products	No Operations in 1985			–	–	–	–	–	–	–	–	–	–	–	–	–
Whonnock Ind.-MacKenzie	42 400	–	42 400	–	–	–	–	–	42 400	10 900	–	5100	19 900	6500	–	6500
Whonnock Ind.-Silvertree	34 900	–	34 900	–	–	–	–	–	34 900	29 000	–	–	5900	–	–	–
Whonnock Ind.-Pacific Pine	55 900	–	55 900	–	–	–	–	–	55 900	42 000	13 900	–	–	–	–	–
Weldwood - Timberland	8500	–	8500	–	–	–	–	–	8500	4500	4000	–	–	–	–	–
Total	824 700	30 600	855 300	89 400	–	–	–	89 400	756 900	440 700	165 000	54 400	64 600	18 600	22 600	41 200
Pulpmills																
Paper	8 600	22 600	31 200	22 500	–	–	–	22 500	8700	–	–	–	–	8700	–	8700

* Export

Table A 3.3. (Cont'd)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Invent.	Net available Surplus
Sawmills																
MacMillan Bloedel-K-3	–	95 800	95 800	4500	–	91 300	–	95 800	–	–	–	–	–	–	–	
Crown For. Ind.-Fraser Mills	(11 000)	–	(11 000)	(7500)	–	–	–	(7500)	3500	–	–	3500	–	–	–	–
B.C. Forest Products - Delta	16 100	–	16 100	–	–	–	–	–	16 100	3900	–	12 200	–	–	–	
Can. Forest Products (2 mills)	(30 000)	85 000	(115 000)	(65 000)	–	(50 000)	–	(115 000)	–	–	–	–	–	–	–	–
Cantree Plywood	12 600	–	12 600	–	–	–	–	–	12 600	–	–	–	–	12 600	–	12 600
Richmond Plywood	50 000	–	50 000	40 000	–	–	–	40 000	10 000	–	–	10 000	–	–	–	–
Surrey Veneer	100	–	100	–	–	–	–	–	100	–	–	–	–	100	–	100
Weldwood of Canada-Kent	37 100	10 300	47 400	47 400	–	–	–	47 400	–	–	–	–	–	–	–	
Weldwood of Canada-T.Ply.	3 500	7900	11 400	11 400	–	–	–	11 400	–	–	–	–	–	–	–	–
Sub-total	160 400	199 000	359 400	175 800	–	141 300	–	317 100	42 300	3900	–	25 700	–	12 700	–	12 700
Shake/shingle mills																
Can. For. Prod.-Huntting Merritt	(20 000)	–	(20 000)	–	–	–	–	–	(20 000)	(20 000)	–	–	–	–	–	
Parker Cedar Products	23 000	–	23 000	–	–	–	–	–	23 000	–	–	–	23 000	–	–	–
Patter Cedar Products	(9000)	–	(9000)	–	–	–	–	–	(9000)	–	–	–	(9000)	–	–	–
Teal Cedar Products	8400	–	8400	–	–	–	–	–	8400	2800*	–	–	–	5600	–	5600
Sub-total	60 400	–	60 400	–	–	–	–	–	60 400	22 800	–	–	32 000	5600	–	5600
Remanufacturing plants																
Port Mann Lumber Reman.	5700	–	5700	–	–	–	–	–	5700	–	–	5700	–	–	–	–
Stadco Forest Products	8300	–	8300	–	–	–	–	–	8300	–	–	8300	–	–	–	–
Fraser River Planing Mills	4900	–	4900	–	–	–	–	–	4900	–	–	4900	–	–	–	–
Imperial Lumber	3900	–	3900	–	–	–	–	–	3900	–	–	–	3900	–	–	–
Island Lumber Specialties	1600	–	1600	–	–	–	–	–	1600	–	–	–	–	1600	–	1600
Sauder Industries-Door Div.	4000	–	5000	–	–	–	–	–	4000	–	–	–	2500	1500	–	1500
Landucci Lumber	5200		5200	–	–	–	–	–	5200	–	–	–	–	5200	–	5200
Faulkener Wood Specialties	4800	–	4800	–	–	–	–	–	4800	–	–	–	4800	–	–	–
Mill and Timber Products	6200	–	6200	–	–	–	–	–	6200	–	–	1600	4600	–	–	–
Wesco Lumber Manufacturing	4000	–	4000	–	–	–	–	–	4000	–	–	–	2000	2000	–	2000
Orchardson Forest Products	2000	–	2000	–	–	–	–	–	2000	–	–	–	1500	500	–	500
MJS Lumber	2200	–	2200	–	–	–	–	–	2200	–	–	–	2200	–	–	–

* Export

Table A 3.3. (Cont'd)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Invent.	Net available Surplus
Remanufacturing plants (cont'd)																
Mizuta Industries	400	–	400	–	–	–	–	–	400	300	–	–	–	100	–	100
Panabode International	2300	–	2300	–	–	–	–	–	2300	–	–	2200	–	100	–	100
Allmac Lumber	1300	–	1300	–	–	–	–	–	1300	700	–	–	600	–	–	–
Canadian Board Co.	600	–	600	–	–	–	–	–	600	–	–	–	600	–	–	–
CIP Inc.	14 100	–	14 100	–	–	–	–	–	14 100	–	–	14 100	–	–	–	–
Domtar Chemicals	1000	–	1000	–	–	–	–	–	1000	–	–	–	–	1000	–	1000
Moga Timber Mill	(800)	–	(800)	–	–	–	–		(800)	–	–	–	–	(800)	–	(800)
Phoenix Millwork	7500	–	7500	–	–	–	–	–	7500	–	–	–	7500	–	–	–
Primex Forest Products	500	–	500	200	–	–	–	200	300	–	–	–	200	100	–	100
Ranba Lumber	4800	–	4800	–	–	–	–	–	4800	–	–	–	4800	–	–	–
Sauder Industries-Tru-Fit Div.	4000	–	4000	–	–	–	2000*	2000	2000	–	–	–	–	2000	–	2000
Sawarne Lumber	12 800	–	12 800	–	–	–	–	–	12 800	9700	–	3100	–	–	–	–
Transco Mills	Included with Terminal Sawmills															
Mitchell Island Forest Products	Included with Terminal Sawmills															
B.C. Clean Wood Preservers	–	7500	7500	7500	–	–	–	7500	–	–	–	–	–	–	–	–
Antrim Forest Products	1500	–	1500	–	–	–	–	–	1500	–	–	–	1500	–	–	–
Leslie Specialty Products	2400	–	2400	–	–	–	–	–	2400	–	–	–	2400	–	–	–
Surrey Mill Work	(4500)	–	(4500)	–	–	–	–	–	(4500)	–	–	–	(1500)	(3000)	–	(3000)
Kaywood Industries	4500	–	4500	–	–	–	–	–	4500	–	–	–	1000	3500	–	3500
Sub-total	115 800	7500	123 300	7700	–	–	2000	9700	113 600	10 700	–	39 900	41 600	21 400	–	21 400
Total	1 169 000	259 700	1 429 600	295 400	–	141 300	2000	438 700	990 900	478 100	165 000	120 000	138 200	67 000	22 600	89 600
Adjustments	–	–	–	–	–	–	–	–	–	+42 000	+700	+2200	–44 900	–	–	–
Total	1 169 900	259 700	1 429 600	295 400	–	141 300	2000	438 700	990 900	520 100	165 700	122 200	93 300	67 000	22 600	89 600

* Prestologs

Table A 3.4. 1985 hog fuel production, usage and surplus (GPU's) by mills sub-region 4 (Fraser River North)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
B.C. Forest Prod.-Hammond	67 600	–	67 600	57 500	–	–	–	57 500	10 100	100	–	–	–	10 000	–	10 000
Whonnock Indust.-Whonnock	40 200	–	40 200	–	–	–	–	–	40 200	23 200	17 000	–	–	–	–	–
Whonnock Indust.-Bay Div.	7400	–	7400	–	–	–	–	–	7400	1600	3400	–	2400	–	–	–
Sub-total	115 200	–	115 200	57 500	–	–	–	57 500	57 700	24 900	20 400	–	2400	10 000	–	10 000
Remanufacturing plants																
5 Star Forest Industries	300	–	300	–	–	–	–	–	300	–	–	–	–	300	–	300
BW Creative Wood Industries	700	–	700	–	–	–		–	700	–	–	–	–	700	–	700
Haney Cedar Products	3600	–	3600	–	–	–	–	–	3600	–	–	–	1800	1800	–	1800
Pac Deck Sales	2500	–	2500	–	–	–	–	–	2500	–	–	–	2500	–	–	–
Sub-total	7100	–	7100	–	–	–	–	–	7100	–	–	–	4300	2300	–	2800
Shake/Shingle Mills																
Whonnock Industries	7000	–	7000	–	–	–	–	–	7000	7000*	–	–	–	–	–	–
Associated Cedar Products	3500	–	3500	–	–	–	–	–	3500	–	–	–	–	3500	–	3500
Blackhawk Forest Products	(15 000)	–	(15 000)	–	–	–	–	–	(15 000)	–	–	–	–	–	(15 000)	(15 000)
Bowman Shake and Shingle	(4700)	–	(4700)	–	–	–	–	–	(4700)	–	–	–	–	–	(4700)	(4700)
Breda Cedar Corp.	Included with S&W Shake & Shingle					–	–	–	–	–	–	–	–	–	–	–
Clayton Cedar Products	3100	–	3100	–	–	–	–	–	3100	–	–	–	3100	–	–	–
Empire Cedar Products	(4000)	–	(4000)	–	–	–	–	–	(4000)	–	–	–	(1000)	(3000)	–	(3000)

Table A 3.4. (Cont'd)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Shake/Shingle Mills (Cont'd)																
Evergreen Cedar Products	(11 000)	–	(11 000)	–	–	–	–	–	(11 000)	–	–	–	–	–	(11 000)	(11 000)
Fraser Cedar Products	(8000)	–	(8000)	–	–	–	–	–	(8000)	–	–	–	–	–	(8000)	(8000)
Green River Log Sales	12 000	–	12 000	–	–	–	–	–	12 000	8000	–	–	4000	–	–	–
Inland Shake & Shingle	(12 000)	–	(12 000)	–	–	–	–	–	(12 000)	–	–	–	–	–	(12 000)	(12 000)
Mission Shake	(10 000)	–	(10 000)	–	–	–	–	–	(10 000)	–	–	–	–	–	(10 000)	(10 000)
Meeker Cedar Products	(10 000)	–	(10 000)	–	–	–	–	–	(10 000)	–	–	–	(5000)	(5000)	–	(5000)
Premium Cedar Products	(2000)	–	(2000)	–	–	–	–	–	(2000)	–	–	–	–	–	(2000)	(2000)
Prospective Shake Products	(8000)	–	(8000)	–	–	–	–	–	(8000)	–	–	–	(8000)	–	–	–
R&E Cedar Products	(2500)	–	(2500)	–	–	–	–	–	(2500)	–	–	–	–	–	(2500)	(2500)
R&K Cedar Products	(1000)	–	(1000)	–	–	–	–	–	(1000)	–	–	–	–	–	(1000)	(1000)
Redwood Shake and Shingle	(5000)	–	(5000)	–	–	–	–	–	(5000)	–	–	–	–	–	*(5000)*	*(5000)*
Ruskin Shake	(6000)	–	(6000)	(6000)	–	–		(6000)	–	–	–	–	–	–	–	–
S&L Cedar Industries	(8000)	–	(8000)	–	–	–	–	–	(8000)	–	–	–	–	–	(8000)	(8000)
S&W Shake and Shingle	7000	–	7000	–	–	–	–	–	7000	–	–	–	–	7000	–	7000
Starco Pacific Mfg.	(2000)	–	(2000)	–	–	–	–	–	(2000)	–	–	–	–	(2000)	–	(2000)
Stave Lake Cedar Mills	(26 000)	–	(26 000)	(8000)	–	–	–	(8000)	(18 000)	–	–	–	–	–	(18 000)	(18 000)
G.W. Lobb Shingle (4 mills)	(14 000)	–	(14 000)	–	–	–	–	–	(14 000)	–	–	–	–	–	(14 000)	(14 000)
Vedder R. Shake & Shingle	(5500)	–	(5500)	–	–	–	–	–	(5500)	–	–	–	–	–	(5500)	(5500)
Waldun Forest Products	20 000	–	20 000	–	–	–	–	–	20 000	–	–	–	–	20 000	–	20 000
Sub-total	207 300	–	207 300	14 000	–	–	–	14 000	193 300	15 000	–	–	21 100	40 500	116 700	157 200
Total	329 600	–	329 600	71 500	–	–	–	75 500	258 100	39 900	20 400	–	27 800	53 300	116 700	170 000

* Export

Table A 3.5. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 5 (Fraser River South)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
Whonnock Ind.-McDonald Cedar	52 000	–	52 000	–	–	–	–	–	52 000	–	29 500*	–	–	22 500	–	22 500
Remanufacturing plants																
Uneeda Wood Products	4200	–	4200	–	–	–	–	–	4200	–	–	–	–	4200	–	4200
Lyle Forest Products	2000	–	2000	–	–	–	–	–	2000	–	–	–	2000	–	–	–
W.I. Cedar International	3000	–	3000	–	–	–	–	–	3000	–	–	–	3000*	–	–	–
Midland Wood Products	4000	–	4000	–	–	–	–	–	4000	–	–	–	4000	–	–	–
Allwood Industries	10 000	–	10 000	–	–	–	–	–	10 000	–	–	–	–	10 000	–	10 000
R.L. Industries	(2000)	–	(2000)	–	–	–	–	–	(2000)	–	–	–	(2000)	–	–	–
Tyee Timber Products	4200	–	4200	–	–	–	–	–	4200	–	–	–	4200	–	–	–
J.S. Squares and Rails Mfg.	4800	–	4800	–	–	–	–	–	4800	–	–	–	4800	–	–	–
Spindaleer Wood Products	3600	–	3600	–	–	–	–	–	3600	–	–	–	3600	–	–	–
Bakerview Forest Products	300	–	300	–	–	–	–	–	300	–	–	–	300	–	–	–
Arbutus Manufacturing	3000	–	3000	–	–	–	–	–	3000	–	–	–	3000	–	–	–
B.C.M. Manufacturing	4000	–	4000	–	–	–	–	–	4000	–	–	–	4000	–	–	–
Holland Developments	–	7200	7200	–	–	–	7200***	7200	–	–	–	–	–	–	–	–
Sub-total	45 100	7200	52 300	–	–	–	7200	7200	45 100	–	–	–	30 900	14 200	–	14 200
Shake/shingle mills																
Breakwater Timber	3500	–	3500	–	–	–	–	–	3500	–	–	–	3500	–	–	–
G and R Cedar	(5000)	–	(5000)	–	–	–	–	–	(5000)	–	–	–	(5000)	–	–	–
Jaguar Shake	1000	–	1000	–	–	–	–	–	1000	–	–	–	–	–	1000	1000
Serpentine Cedar	1500	–	1500	–	–	–	–	–	1500	–	–	–	–	–	1500	1500
Sub-total	11 000	–	11 000	–	–	–	–		11 000	–	–	–	8500	–	2500	2500
Other																
Columbia Pacific (Chipping Station)	22 000	–	22 000	–	–	–	–	–	22 000	22 000*	–	–	–	–	–	–
Total	130 100	7200	137 300	–	–	–	7200	7200	130 100	22 000	29 500	–	39 400**	36 700	2500	39 200

* Export ** 4 000 GPU's of local sales used for prestologs *** Prestologs

Table A 3.6. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 6 (Fraser Canyon)

Company/Division	Hog fuel			On-site hog fuel Utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
B.C. Forest Products-	(60 000)	–	(60 000)	–	–	–	–	–	(60 000)	–	–	–	–	–	(60 000)	(60 000)

Table A 3.7. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 7 (Sunshine Coast)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Inven-tory	Net available surplus
Sawmills & Pulpmills																
MacMillan Bloedel-Powell River Division	101 400	189 100	290 500	288 700	–	–	–	288 700	1800	–	–	–	–	–	1800*	1800
Shake/Shingle Mills																
Doug English Cedar Products & Others (3)	8300	–	8300	–	–	–	–	–	8300	8300	–	–	–	–	–	–
Other																
L&K – Langdale Yard	1700	–	1700	–	–	–	–	–	1700	1700	–	–	–	–	–	–
Total	111 400	189 100	300 500	288 700	–	–	–	288 700	11 800	10 000	–	–	–	–	1800	1800

* Inventory change

Table A 3.8. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 8 (Victoria/Sooke)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Inventory	Net available surplus
Sawmills																
B.C. Forest Prod.-Victoria	81 000	–	81 000	33 000	–	–	–	33 000	48 000	23 200	20 400	–	4400	–	–	–
Lamford Forest Prod.-Sooke	3300	–	3300	–	–	–	–	–	3300	3300	–	–	–	–	–	–
Sub-total	84 300	–	84 300	33 000	–	–	–	33 000	51 300	26 500	20 400	–	4400	–	–	–
Plywood/veneer mills																
Victoria Plywood Cooperative	18 000	–	18 000	8800	–	–	–	8800	9200	–	–	–	4200	–	5000	5000
Total	102 300	–	102 300	41 800	–	–	–	41 800	60 500	26 500	20 400	–	8600	–	5000	5000

Table A 3.9. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 9 (Cowichan Lake/Crofton)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Pro-duced on-site	Pur-chased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
B.C. Forest Prod.-Youbou	140 000	–	140 000	100 000	–	–	–	100 000	40 000	30 000	10 000	–	–	–	–	–
Cimcor Fibre - Duncan	3000	–	3000	–	–	–	–	–	3000	3000	–	–	–	–	–	–
Doman Ind.-Cowichan Bay	63 900	–	63 900	–	–	–	–	–	63 900	61 500	2400	–	–	–	–	–
Kendon Recovery-Duncan	800	–	800	–	–	–	–	–	–	800	–	–	–	–	400	400
Sub-total	207 700	–	207 700	100 000	–	–	–	100 000	107 700	94 900	12 400	–	–	–	400	400
Shake/Shingle mills																
Ridgewood Forest Prod.	(4500)	–	(4500)	–	–	–	–	–	(4500)	–	–	–	–	–	(4500)	(4500)
Remanufacturing plants																
C and C Lath Mill	3000	–	3000	–	–	–	–	–	3000	–	100	–	2900	–	–	–
Pulpmills																
B.C. Forest Prod.-Crofton	23 700	299 800	323 500	203 600	58 000	–	–	261 600	61 900	–	–	–	–	61 900*	–	61 900
Other																
B.C. Forest Prod.-Log Sorts	9900	–	9900	–	–	–	–	–	9900	9900	–	–	–	–	–	–
Total	248 800	299 800	548 600	303 600	58 000	–	–	361 600	187 000	104 800	12 500	–	2900	61 900	4900	66 800

* Inventory change

Table A 3.10. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 10 (Chemainus/Nanaimo)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Inventory	Net available surplus
Sawmills																
Doman Ind.-Duke Point	100 500	–	100 500	–	–	–	–	–	100 500	65 800	34 500	–	–	–	–	–
Doman Ind.-Ladysmith	55 900	–	55 900	–	–	–	–	–	55 900	50 800	5100	–	–	–	–	–
Doman Ind.-Nanoose	23 600	–	23 600	–	–	–	–	–	23 600	23 100	500	–	–	–	–	–
CIP Inc.-Mayo For. Prod.	38 000	–	38 000	–	–	–	–	–	38 000	15 400	22 600	–	–	–	–	–
CIP Inc.-Ladysmith (Saltair)	81 800	–	81 800	–	–	–	–	–	81 800	67 700	14 100	–	–	–	–	–
CIPA Industries	27 400	–	27 400	–	–	–	–	–	27 400	16 900	10 500	–	–	–	–	–
G and G Sawmills	4100	–	4100	–	–	–	–	–	4100	4100	–	–	–	–	–	–
MacMillan Bloedel-Harmac #3	127 900	–	127 900	–	–	–	–	–	127 900	127 900	–	–	–	–	–	–
MacMillan Bloedel-Harmac #4	101 700	–	101 700	–	–	–	–	–	101 700	101 700	–	–	–	–	–	–
MacMillan Bloedel-Chemainus	23 100	–	23 100	–	–	–	–	–	23 100	21 100	2000	–	–	–	–	–
Allwood Products	800	–	800	–	–	–	–	–	800	800	–	–	–	–	–	–
Raincoast Cedar Prod.	2200	–	2200	–	–	–	–	–	2200	2200	–	–	–	–	–	–
Other (Parksville)	800	–	800	–	–	–	–	–	800	800	–	–	–	–	–	–
Sub-total	587 800	–	587 800	–	–	–	–	–	587 800	498 300	89 500	–	–	–	–	–
Pulpmills																
MacMillan Bloedel-Harmac	22 000*	271 800	293 800	281 700	–	–	–	281 700	12 100	8300	–	–	–	–	3800**	3800
Total	609 800	271 800	881 600	281 700	–	–	–	281 700	599 900	506 600	89 500	–	–	–	3800	3800

* Some from on-site inventory ** Inventory change

Table A 3.11. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 11 (Campbell River)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam/power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
Crown Forest Industries	47 700	–	47 700	–	–	–	–	–	47 000	31 800	15 900	–	–	–	–	–
Primex For. Prod.-Field	16 700	–	16 700	–	–	–	–	–	16 700	12 600	4100	–	–	–	–	–
Raven Lumber	56 200	–	56 200	–	–	–	–	–	56 200	24 200	32 000	–	–	–	–	–
Sub-total	120 600	–	120 600	–	–	–	–	–	120 600	68 600	52 000	–	–	–	–	–
Shake/shingle mills																
Bonne Venture Cedar Prod.	(included with Raven Lumber)															
Anglo American Cedar Prod.	12 400	–	12 400	–	–	–	–	–	12 400	12 400	–	–	–	–	–	–
BCF Shake Mill	(3600)	–	(3600)	–	–	–	–	–	3600	–	–	–	–	–	(3600)	(3600)
Comox Valley Shakes	(3700)	–	(3700)	–	–	–	–	–	3700	–	–	–	–	–	(3700)	(3700)
Sub-total	19 700	–	19 700	–	–	–	–	–	19 700	121 400	–	–	–	–	7300	7300
Other																
Crown Forest Ind. (sorting ground/mobile chipper)	30 000	–	30 000	–	–	–	–	–	30 000	30 000	–	–	–	–	–	–
Pulpmills																
Crown For.Ind.-Elk Falls	28 200	598 600	626 800	382 000	237 700	–	–	619 700	7100	4600	2300	–	–	200*	–	200
Total	198 500	598 600	797 100	382 000	237 700	–	–	619 700	177 400	115 600	54 300	–	–	200	7300	7500

* Inventory change

Table A 3.12. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 12 (Port Alberni)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam/power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/power	Pulp furnish	Board prod'n	Local sales	Land fill	Inventory	Net available surplus
Sawmills																
MacMillan Bloedel-Somass	105 000	–	105 000	–	–	–	–	–	105 000	105 000	–	–	–	–	–	–
MacMillan Bloedel-Alberni Pacific	124 700	8700	133 400	46 800	–	–	–	46 800	86 600	86 600	–	–	–	–	–	–
Nagaard Sawmills	700	–	700	–	–	–	–	–	700	700	–	–	–	–	–	–
Sub-total	230 400	8700	239 100	46 800	–	–	–	46 800	192 300	192 300	–	–	–	–	–	–
Shake/shingle mills																
Star Shingle	200	–	2000	–	–	–	–	–	2000	2000	–	–	–	–	–	–
Plywood/veneer mills																
MacMillan Bloedel-Alberni Ply	33 000	–	33 000	–	–	–	–	–	33 000	33 000	–	–	–	–	–	–
Pulpmills																
MacMillan Bloedel-Alberni Pulp and Paper	67 000	250 300	317 300	309 500	–	–	–	309 500	7800	–	–	–	–	–	7800*	7800
Total	332 400	259 000	591 400	356 300	–	–	–	356 300	235 100	227 300	–	–	–	–	7800	7800

* Inventory change

Table A 3.13. 1985 hog fuel production, usage and surplus (GPU's) by mills in sub-region 13 (Tahsis/Port Alice)

Company/Division	Hog fuel			On-site hog fuel utilization					Disposition of mill surplus							
	Produced on-site	Purchased off-site	Total available	Steam/ power	Pulp furnish	Board prod'n	Other	Total	Mill surplus	Steam/ power	Pulp furnish	Board prod'n	Local sales	Land fill	Incin.	Net available surplus
Sawmills																
CIP Inc.-Tahsis Hemlock	85 000	–	85 000	–	–	–	–	–	85 000	85 000	–	–	–	–	–	–
CIP Inc.-Tahsis Cedar	18 100	–	18 100	–	–	–	–	–	18 100	13 400	–	–	–	4700	–	4700
Sub-total	103 100	–	103 100	–	–	–	–	–	103 100	98 400	–	–	–	4700	–	4700
Shake/shingle mills																
Coal Harbour Shake and Shingle	(6000)	–	(6000)	–	–	–	–	–	(6000)	–	–	–	–	–	(6000)	(6000)
Pulpmills																
CIP Inc.-Gold River	61 300*	84 300	145 600	145 600	–	–	–	145 600	–	–	–	–	–		–	–
Western Pulp-Pt.Alice	60 600	–	60 600	60 600	–	–	–	60 600	–	–	–	–	–	–	–	–
Sub-total	121 900	84 300	206 200	206 200	–	–	–	206 200	–	–	–	–	–	–	–	–
Total	231 000	84 300	315 000	206 200	–	–	–	206 200	109 100	98 400	–	–	–	4700	6000	10 700

* Some from on-site inventory